.9
P69P



THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Vol. XVIII July 1, 1934 Number 7

LIBRARY
RECEIVED
★ JUL 17 1934 ★
U. S. Department of Agriculture

## ALASKAN FUNGI

Edith K. Cash

Collections of Alaskan fungi on which this list is based were made by N. E. Stevens in 1922 and J. P. Anderson in 1923, and have been deposited in the Mycological Collections of the Bureau of Plant Industry. They include a number of species not recorded from this region in the following previous accounts:

Saccardo, P. A., C. H. Peck, and W. Trelease. The fungi of Alaska. Harriman Alaska Expedition, Cryptogamic Botany, vol. 5, 53 p., 7 pl. 1904.

Anderson, J. P. Fungus diseases. Rept. Alaska Agr. Expt. Sta. 1914: 26-27. 1915.

_____ Plant diseases. Rept. Alaska Agr. Expt. Sta. 1915: 39-41. 1916.

_____ Notes on the flora of Sitka, Alaska. Proc. Iowa Acad. Sci. 23: 427-482, 1916. The fungus flora: p. 477-482.

_____ Some Alaskan fungi. Proc. Iowa Acad. Sci. 27: 99-108. 1922.

Several species have apparently not been recorded hitherto from North America. Except where otherwise stated, determinations were made by the writer. Observations on distribution and pathological importance are quoted from Mr. Anderson's field notes. Most of the rust determinations have been verified by Mr. George B. Cummins, Purdue University.

### PERONOSPORALES

PERONOSPORA OBOVATA Bon. on Spergula arvensis, Sitka, June 26, 1923, 716, coll. and det. J.P.A.

PLASMOPARA EPILOBII (Raf.) Schroet. on Chamaenerion latifolium, Haines, Aug. 29, 1923, 989, coll. & det. J.P.A.

PLASMOPARA NIVEA (Ung.) Schroet. on Ligusticum sp., Skagway, June 23, J.P.A. 695; Haines, Aug. 27, 1923, J.P.A.

ASCOMYCETES

AMERODOTHIS sp. (?=Dothidea denigrans Schw.) on Kalmia microphylla, Ketchikan, Aug. 21, 1923, J.P.A. 912.

Owing to the brief description and inadequate material of the Schweinitz species, this could not be identified positively. No similar species is reported on any ericaceous host.

CERIOSPORA RIBIS P. Henn. & Ploettner, on Ribes bracteosum, Sitka, Aug. 16 and 18, 1922, N.E.S.; Juneau, July 12, 1923, J.P.A. 752-a.

CLAVICEPS MICROCEPHALA (Wallr.) Tul. on Calamagrostis langsdorfii, Haines, Aug. 27, 1923, 967; on C. nutkaensis, Ketchikan, Aug. 23, 1923, 938 and Gravina Isl., Ketchikan, 898, coll. & det. J.P.A.

CLAVICEPS PURPUREA (Fr.) Tul. on Elymus mollis, Chatham, Aug. 1, 1923, 876 and Haines, Aug. 27, 1923, 966, coll. & det. J.P.A.

CUCURBITARIA CONGLOBATA (Fr.) Ces. on Alnus sp., Sitka, Aug. 18, 1922, and Skagway, Aug. 10 (spermagonia), N.E.S.

DERMATEA CERASI (Pers.) Fr. on Prunus avium, Sitka, July 30, 1923, J.P.A. 870.

DIATRYPE BULLATA (Hoffm.) Fr. on Populus trichocarpa, Skagway, June 21, 1923, J.P.A. 682.

DIATRYPE DISCIFORMIS (Hoffm.) Fr. on Alnus sp., Skagway, Aug. 10, 1922, N.E.S. det. C. L. Shear.

DIATRYPE STIGMA (Hoffm.) Fr. on Alnus sp., Skagway, June 20, 1923, J.P.A. 681.

DIMEROSPORIUM TSUGAE Dearn. on Tsuga heterophylla, Sitka, July 25, 1923, J.P.A. 818.

ERYSIPHE CICHORACEARUM DC. on Achillea borealis, Juneau, Oct. 1, 1923, 1086; on Artemisia elatior, Skagway, Sept. 3, 1923; on Solidago sp., Haines, Aug. 29, 1923, 992, coll. & det. J.P.A.

ERYSIPHE GRAMINIS DC. on Poa pratensis, Skagway, June 23, 1923, 697 and Mendenhall, Aug. 6, 1923, 891, coll. & det. J.P.A.

ERYSIPHE POLYGONI DC. on Aquilegia formosa, Tenakee, June 27, 1923, 733 and Skagway, Sept. 3, 1923, 1034: on Geum macrophyllum, Haines, July 16, 1923, 761, and Ketchikan, Aug. 22, 1923, 932; on Lathyrus maritimus, Haines, July 18, 1923; on

Lathyrus palustris, Haines, Aug. 29, 1923, 993; on Lupinus nootkatensis, Mendenhall, Sept. 13, 1923, 1060; on Vicia sitchensis, Gravina Isl., Ketchikan, Aug. 21, 1923, 926, coll. and det. J.P.A.

EXOASCUS CERASI Fckl. on Prunus avium, Sitka, 714, coll. & det. J.P.A.
"A tree of Mazzard cherry, affected in 1914 when I first came to Sitka is still affected."

GIBBERA VACCINII Fr. on Vaccinium vitis-idaea, Ketchikan, Aug. 4, and Sitka, Aug. 17-18, 1922, N.E.S.; Ketchikan, Aug. 23, 1923, J.P.A. 936-a.

As the citation of this species in Seymour's Host Index is based on a misdetermination, this may be the first record from North America.

GIBBERIDEA RIBIS Tr & Earle on Ribes grossularia, Sitka, Aug. 17, 1922, N.E.S.

GNOMONIA DEPRESSULA Karst. on Rubus strigosus x parvifolius, Sitka, July 30, 1923, J.P.A. 871; on Rubus sp. (Cuthbert raspberry), Sitka, Aug. 16, 1922, N.E.S.

GNOMONIA FENESTRANS (Duby) Sacc. on Chamaenerion angustifolium, Sitka, Aug. 18, 1922, N.E.S.

GODRONIA CASSANDRAE Pk. (pycnidial stage) on Vaccinium sp., Juneau, Aug. 6, 1922, N.E.S.

GODRONIA DAVIDSONI Cash on Ribes bracteosum x nigrum, Juneau, July 12, 1923, J.P.A., 758.

GODRONIA URCEOLUS (Alb. & Schw.) Karst. on Ribes bracteosum, Sitka, July 30, 1923, J.P.A., 872.

?LINOSPORA POPULINA (Pers.) Schroet. (immature) on Populus trichocarpa, Haines, Aug. 31, 1923, J.P.A. 1011 and Skagway, Sept. 3, 1923, J.P.A., 1026.

LOPHODERMIUM OXYCOCCI (Fr.) Karst. on Vaccinium vitis-idaea, Ketchikan, Aug. 4, 1922, N.E.S.

LOPHODERMIUM PINASTRI (Schrad.) Chev. on Pinus sp., Sitka, Aug. 14, 1922, N.E.S.

LOPHODERMIUM SPHAERIOIDES (Alb. & Schw.) Duby on Ledum sp., Sitka, Aug. 14-15, 1922, N.E.S.

MELANOMMA PULVIS-PYRIUS (Pers.) Fckl. on Alnus sp., Sitka, Aug. 18, 1922, N.E.S.

MELANOMMA SAMBUCI Earle on Sambucus sp., Juneau, Aug. 6, 1922, N.E.S.

MICROSPHAERA ALNI (Wallr.) Wint. on Alnus sitchensis, Juneau, Aug. 18, 1923, 897 and Skagway, Sept. 3, 1923, 1028; on Alnus sp., Haines, Aug. 29, 1923, 980, coll. & det. J.P.A.

MICROSPHAERA ALNI var. VACCINII (Schw.) Salm. on Vaccinium alaskense, Ketchikan, Aug. 22-23, 1923, 934-935, and Haines, Aug. 27, 1923, 953; on V. parvifolium, Gravina Isl., Ketchikan, Aug. 21, 1923, 899 and 900; on Menziesia ferruginea, Gravina Isl., Ketchikan, Aug. 21, 1923, 925, and Haines, Aug. 27, 1923, 952, coll & det. J.P.A.

MOLLISIA LIGNI (Desm.) Karst. on Sambucus sp., Aug. 1922, N.E.S.

MYCOSPHAERELLA FRUTICUM (Starb.) on Rubus sp. (St. Regis raspberry), Sitka, Aug. 15, 1922, N.E.S.

MYCOSPHAERELLA LONGISSIMA (Fckl.) on Bromus secalinus, Sitka, July 25, 1923, J.P.A., 835.

Not reported from North America. Material agrees with Syd. Myc. Germ. 2112.

MYCOSPHAERELLA POPULI Schw. (Septoria stage) on Populus trichocarpa, Haines, July 16, 1923, 765, and Mendenhall, Aug. 6, 1923, 885, coll. & det. J.P.A.

MYCOSPHAERELLA STROMATOIDEA Dearn. on Rumex obtusifolius, Haines, Aug. 29, 1923, J.P.A., 999.

NECTRIA CINNABARINA (Tode) Fr. on Salix sp., Skagway, Aug. 6, 1922, N.E.S.; on Ribes vulgare, Skagway, June 24, 1923, 701, coll. & det. J.P.A.

"Nectria cinnabarina is very common early in the season on very many kinds of recently killed woody plants or parts. It is however, rather unusual to find it so late in the season as June 24."

PHYLLACHORA HERACLEI (Fr.) Fckl. on Heracleum lanatum, Haines, Aug. 27, 1923, 924-a, coll. & det. J.P.A.

PHYLLACHORA TRIFOLII (Pers.) Fckl. on Trifolium repens, Skagway, Sept. 3, 1923, 1036, coll. & det. J.P.A.

PLOWRIGHTIA RIBESIA (Pers.) Sacc. on Ribes vulgare, Skagway, June 20, 1923, 680, and Haines, Aug. 29, 1923, 1005, coll. & det. J.P.A.; on Ribes sp. (white and red currants), Sitka, Aug. 16-17, 1922, N.E.S.

"Plowrightia was very abundant at Clark's ranch at Skagway and his currant bushes were very unhealthy looking, but it appears somewhat doubtful if condition was caused by the fungus. This fungus is very common on red currants."

PODOSPHAERA LEUCOTRICHA (Ell. & Ev.) Salm. on Malus hybrid, Sitka, July 25, 1923, 822, coll. & det. J.P.A.

PODOSPHAERA OXYACANTHAE (DC.) D By. on Vaccinium uliginosum, Mendenhall, Sept. 13, 1923, 1062, coll. & det. J.P.A.

PSEUDOHELOTIUM JERDONI Sacc. on Cucurbitaria conglobata (Fr.) Ces. on Alnus sp., Basin, Juneau, Aug. 6, 1922, N.E.S.

PSEUDOPEZIZA RIBIS Kleb. (Gloeosporium ribis) on Ribes bracteosum, Sitka, July 25, 1923, 826; on R. bracteosum x nigrum ("Not common on this host"), Juneau, July 12, 1923, 757; on R. laxiflorum, Sitka, July 26, 1923, 850; on R. triste, Skagway, Sept. 3, 1923, 1037; on R. vulgare, Juneau, July 12, 1923, 756, Haines, Aug. 28, 1923, 976, and Ketchikan, Aug. 24, 1923, 947, coll. & det. J.P.A.

"Anthracnose is quite common on the garden red currant and at times is very bad. Bad infection is usually followed by more or less defoliation. It is one of the most destructive diseases we have on Ribes vulgare."

RHYTISMA ANDROMEDAE (Pers.) Fr. on Andromeda polifolia, Sitka, July 26, 1923, 846, and Gravina Isl., Ketchikan, Aug. 21, 1923, 917, coll. & det. J.P.A.

RHYTISMA ARBUTI Phill. on Menziesia ferruginea, Juneau, Sept. 11, 1923, 1054, Mt. Roberts, Juneau, Sept. 28, 1923, 1085, and Gravina Isl., Ketchikan, Aug. 21, 1923, coll. & det. J.P.A.

"Common late in the season."

RHYTISMA SALICINUM (Pers.) Fr. on Salix arctica, Mt. Roberts, Juneau, Sept. 28, 1923, 1082; on S. barclayi, Skagway, Sept. 2, 1923, 1031; on S. sitchensis, Haines, Aug. 27, 1923, 957, coll. & det. J.P.A.

?SCLEROTINIA OXYCOCCI Wor. (sclerotia) on Vaccinium alaskense, Sitka, July 26, 1923, J.P.A., 841; on Vaccinium parvifolium, Gravina Isl., Ketchikan, Aug. 21, 1923, J.P.A., 901.

SPHAEROTHECA HUMULI (DC.) Burr. on Epilobium glandulosum, Gravina Isl., Ketchikan, Aug. 21, 1923, 920-a; on E. hornemannii, Mt. Roberts, Juneau, Sept. 28, 1923, 1081; on Lepargyrea canadensis, Skagway, June 21, 1923, 684; on Ribes bracteosum, Chatham, Aug. 1, 1923; on R. bracteosum x nigrum, Juneau, July 12, 1923, 759; on Rubus spectabilis, Tenakee, June 27, 1923, 731, Haines, July 16, 1923, 763, Sitka, July 25, 1923, 831, Chatham, Aug. 1, 1923, 874, and Ketchikan, Aug. 22, 1923, 929; on Sanguisorba microcephala, Gravina Isl., Ketchikan, Aug. 21, 1923, 909; on Saxifraga aestivalis, Juneau, Aug. 18, 1923, 896; on Rubus parviflorus, Tenakee, June 27, 1923, 732, coll. & det. J.P.A.

"S. humuli is a common mildew occurring on several hosts. It is not so common on Ribes bracteosum as on some other hosts but hybrids of this species with R. nigrum of second

generation are worse hit at Juneau than any other host. Not observed on R. nigrum. Common every season on the salmonberry (Rubus spectabilis) but by far the worst infection I have ever observed in ten seasons in Alaska was on the bushes around Mr. Merrill's place near Sitka. These were all young shoots as they had been cut down several years in succession. Apparently every shoot was badly diseased."

HUMULI

SPHAEROTHECA/FULIGINEA (Schlecht.) Salm. on Chamomilla suaveolens, Klukwan, July 17, 1923, J.P.A., 780; on Erigeron peregrinus, Mt. Roberts, Juneau, Sept. 28, 1923, 1072; on Leontodon taraxacum, Skagway, June 23, 1923, 696, and July 23, 1923, 811; on Nabalus hastatus, Skagway, Sept. 3, 1923, 1035; on Scorzonella borealis, Gravina Isl., Ketchikan, Aug. 21, 1923, 911; on Tellima grandiflora, Juneau, Oct. 2, 1923, 1090; on Tiarella trifoliata, Sitka, July 26, 1923, 847, coll. & det. J.P.A.

SPHAEROTHECA MORS-UVAE (Schw.) Berk. & Curt. on Ribes echinatum, Skagway, June 21, 1923, 689; Tenakee, June 27, 1923, 730, and Haines, July 16, 1923, 762; on R. grossularia, Sitka, July 30, 1923, 866; on R. vulgare (cult.), Skagway, July 23, 1923, 812, coll. & det. J.P.A.

SPHAEROTHECA PANNOSA (Wallr.) Lév. on Rosa sp. (cult.), Juneau, Sept. 10, 1923, 1050 and Gravina Isl., Ketchikan, Aug. 21, 1923, 928, coll. & det. J.P.A.; on Rosa acicularis, Haines, Aug. 29, 1923, 1002.

TAPHRINA TOSQUINETII (Westd.) Magn. on Alnus oregana, Sitka, June 26, 1923, J.P.A., 717.

UNCINULA SALICIS (DC.) Wint. on Populus trichocarpa, Haines, Aug. 29, 1923, 988, and Skagway, Sept. 3, 1923, 1027; on Salix alaxensis, Haines, Aug. 29, 1923, 986 ("Very common"); on Salix barclayi, Haines, Aug. 29, 1923, 987; on Salix sp., Skagway, Sept. 3, 1923, 1029.

VENTURIA INAEQUALIS (Cke.) Aderh. on Pyrus baccata, Sitka, June 26, 1923, 709; on Pyrus malus, Sitka, June 26, 1923, 710, and Haines, Aug. 28, 1923, 977, coll. & det. J.P.A.

"Common at Experiment Station (Sitka). A few trees at one place in Haines were affected. None at several other ranches."

VENTURIA KALMIAE Pk. on Kalmia microphylla, Sitka, July 26, 1923, 844, coll. & det. J.P.A., and Juneau, June 30, 1923, J.P.A., 737.

## UREDINALES

CALYPTOSPORA COLUMNARIS (Alb. & Schw.) Kuehn on Vaccinium ovalifolium, Skagway, July 22, 1923, 807; on V. uliginosum, Skagway, July 22, 1923, 799; on V. vitis-idaea, Skagway, July 22, 1923, 806, coll. & det. J.P.A.

COLEOSPORIUM SOLIDAGINIS (Schw.) Thuem. on Erigeron peregrinus, Mt. Roberts, Juneau, Sept. 28, 1923, 1071; on Solidago sp., Haines, Aug. 29, 1923, 982, coll. & det. J.P.A.

CRONARTIUM COMPTONIAE Arth. on Myrica gale, Gravina Isl., Ketchikan, Aug. 21, 1923, 908, coll. & det. J.P.A.

GYMNOSPORANGIUM JUNIPERINUM (L.) Martius on Sorbus sitchensis, Haines, Aug. 31, 1923, J.P.A. 1010, det. G. B. Cummins.

GYMNOSPORANGIUM NELSONI Arth. on Pyrus diversifolia, Gravina Isl., Ketchikan, Aug. 21, 1923, J.P.A. 921, det. G. B. Cummins.

GYMNOSPORANGIUM SORBI (Arth.) Kern on Chamaecyparis nootkatensis, Sitka, July 26, 1923, 851; on Pyrus diversifolia, Sitka, July 25, 1923, 852; on Sorbus sitchensis, Sitka, July 26, 1923, 853, coll. & det. J.P.A.

"Common around Sitka."

HYALOPSORA ASPIDIOTUS (Pk.) Magn. on Phegopteris dryopteris, Tenakee, June 27, 1923, 721, and Haines, July 19, 1923, 786, coll. & det. J.P.A.

MELAMPSORA ARCTICA Rostr. on Salix sp., Haines, Aug. 27, 1923, J.P.A. 960; on Salix sitchensis, Mendenhall, Aug. 6, 1923, J.P.A. 888, det. G. B. Cummins.

"Very common."

MELAMPSORA BIGELOWII Thuem. on Salix arctica, Juneau, Aug. 7, 1923, J.P.A. 882 and Sept. 28, 1923, J.P.A. 1076; on S. barclayi, Mendenhall, Sept. 13, 1923, J.P.A. 1066; on S. reticulata Juneau, Aug. 7, 1923, J.P.A. 883, det. G. B. Cummins.

MELAMPSORELLA ELATINA (Alb. & Schw.) Arth. on Cerastium beeringianum (?) Skagway, June 23, 1923, 700; on Picea sitchensis, "Forming witches' brooms," Haines, Aug. 29, 1923, 1004, coll. & det. J.P.A.

MELAMPSORIDIUM BETULAE (Schum.) Arth. on Betula kenaica, Haines, Aug. 31, 1923, 1014, coll. & det. J.P.A.; on Betula sp., Klukwan, July 17, 1923, J.P.A. 771

MELAMPSOROPSIS LEDICOLA (Pk.) Arth. on Ledum groenlandicum, Juneau, June 30, 1923, 740; on L. palustre, Skagway, July 22, 1923, 802;

on Picea sitchensis, Juneau, June 30, 1923, 741, Sitka, July 25, 1923, 814, and Ketchikan, Aug. 21, 1923, 919, coll. & det. J.P.A.

"A common rust unusually abundant around Sitka this year."

MELAMPSOROPSIS PYROLAE (DC.) Arth. on Moneses reticulata, Tenakee, June 27, 1923, 719; on Pyrola secunda, Haines, July 19, 1923, 789, and Skagway, June 21, 1923, 686, coll. & det. J.P.A.

PERIDERMIUM CEREBRUM Pk. on Pinus contorta, Skagway, June 21, 1923, 683, and Haines, Sept. 2, 1923, 1023, coll. & det. J.P.A.

"I found Peridermium on Pinus contorta at Sitka several years ago. Now I find it at Skagway. The alternate host of P. cerebrum is supposed to occur on oak but there are no oaks in Alaska. In ten years I have not seen one even in cultivation. Nearest relatives of oak are Alnus and Betula."

PHRAGMIDIUM OCCIDENTALE Arth. on Rubus parviflorus, Tenakee, June 27, 1923, 722, Haines, Aug. 28, 1923, 973, and Sitka, July 25, 1923, 830, coll. & det. J.P.A.

PHRAGMIDIUM ROSAE-ACICULARIS Liro on Rosa acicularis, Haines, Aug. 30, 1923, 1009; on Rosa nutkana (?), Sitka, June 26, 1923, 715; on Rosa rugosa (hybrid), Juneau, July 12, 1923, 753, coll. & det. J.P.A.

"Phragmidium abundant on some bushes of Rosa rugosa hybrid, but little or none on other cultivated varieties or R. rugosa. This rust is at times common on some of the native species."

PUCCINIA AREOLATA Diet. & Holw. on Caltha biflora, Ketchikan, Aug. 22, 1923, J.P.A. 930, det. G. B. Cummins.

PUCCINIA CLEMATIDIS (DC.) Lagh. on Aquilegia formosa, Juneau, July 2, 1923, 748, coll. & det. J.P.A.; on Actaea eburnea and A. arguta, Klukwan, July 17, 1923, J.P.A. 778 and 779.

PUCCINIA CICUTAE Lasch on Cicuta douglasii, Haines, Aug. 29, 1923, J.P.A., 1001.

PUCCINIA COELOPLEURI Arth. on Coelopleurum gmelini, Haines, Aug. 27, 1923, 972, and July 18, 1923, 783, coll. & det. J.P.A.; Haines, July 18, 1923, J.P.A. 784.

PUCCINIA DRABAE (Rudolphi) Arth. & Jacks. on Draba sp., Skagway, June 25, 1923, coll. & det. J.P.A.

PUCCINIA EPILOBII-TETRAGONI (DC.) Wint. on Epilobium anagallidifolium, Juneau, Aug. 7, 1923, 679, 703, coll. & det. J.P.A.

PUCCINIA GROSSULARIAE (Schum.) Lagh. on Carex macrochaeta, Mt. Roberts, Juneau, Sept. 28, 1923, 1070; on C. mertensii, Haines, Aug. 27,

1923, 970; on Ribes bracteosum, Juneau, July 2, 1923, 747, Sitka, June 25, 1923, 704, and Tenakee, June 27, 1923, 724; on R. echinatum, Sitka, June 26, 1923, 705; on R. laxiflorum, Juneau, June 30, and July 2, 1923, 745; on R. triste, Skagway, June 23, 1923, 698; on R. vulgare, Sitka, June 26, 1923; on Ribes sp., Juneau, July 2, 1923, 746, coll. & det. J.P.A.

"Ribes bracteosum, a very common species in southeastern Alaska, is quite commonly affected with aecia of Puccinia grossulariae, which is seldom destructive. Some plants cultivated at the Sitka Experiment Station, however, were very badly affected, at least ten times as much as the average wild plant.

"Ribes echinatum in cultivation at the Sitka Agricultural Experiment Station was much more badly infected by rust than I have ever found them in a native state. It does not occur wild in the immediate vicinity of Sitka. Both R. echinatum and R. triste occur at Skagway and infection by rust occurred at both places on both species, but was proportionately reversed. At Skagway Ribes triste, the native red currant, seems more susceptible to rust than other species of Ribes, while two bushes transplanted to the grounds of the Experiment Station at Sitka were more resistant than other forms of Ribes growing close by."

PUCCINIA HEUCHERAE (Schw.) Dietr. on Heuchera glabra, Juneau, July 2, 1923, 749, and Oct. 2, 1923, 1087, Skagway, June 22, 1923, 692, and Haines, July 16, 1923, 767; on Tiarella trifoliata, Sitka, July 28, 1923, 856, and Tenakee, June 27, 1923, 920, coll. & det. J.P.A.

PUCCINIA INSPIRATA Jacks. on Nabalus hastatus, Gravina Isl., Ketchikan, Aug. 21, 1923, 927, coll. & det. J.P.A., and Sitka, July 26, 1923, J.P.A. 849, det. G.B.Cummins.

PUCCINIA KARELICA Tranz. on Trientalis arctica, Juneau, June 30, 1923, 742, coll. & det. J.P.A.

PUCCINIA MILLEFOLII Fckl. on Achillea borealis, Haines, Aug. 31, 1923, 1079, coll. & det. J.P.A.

PUCCINIA ORTONII Jacks. on Dodecatheon frigidum, Haines, Aug. 27, 1923, J.P.A., 997, det. G.B.Cummins.

PUCCINIA PARKERI Diet. & Holw. on Ribes echinatum, Chatham, Aug. 1, 1923, J.P.A. 878, det. G. B. Cummins.

"At Chatham I found two or three clumps of Ribes echinatum showing abundant sori of Puccinia. This is the only time I have found telia of any rust on species of Ribes in Alaska, although aecia are common."

PUCCINIA PIMPINELLAE (Strauss) H. Mart. on Osmorrhiza intermedia, Klukwan, July 17, 1923, 772, coll. & det. J.P.A.

PUCCINIA POARUM Niessl on Poa pratensis, Klukwan, July 17, 1923, 774, coll. & det. J.P.A.

PUCCINIA PORPHYROGENITA Curt. on Cornus canadensis, Tenakee, June 27, 1923, 723, and Haines, July 19, 1923, 788, coll. & det. J.P.A.

PUCCINIA RANUNCULI Blytt on Ranunculus eschscholtzii (?), Sitka, July 28, 1923, J.P.A. 860, det. G. B. Cummins.

PUCCINIA RHAMNI (Pers.) Wettst. on Lepargyrea canadensis, Klukwan, July 17, 1923, 775, coll. & det. J.P.A.

PUCCINIA SYMPHORICARPI Howe on Symphoricarpos racemosus, Klukwan, July 17, 1923, J.P.A., 776.

PUCCINIA TARAXACI Plowr. on Taraxacum alaskanum, Skagway, June 23, 1923, 699; on Leontodon taraxacum, Skagway, June 21, 1923, 687, coll. & det. J.P.A.

PUCCINIA VIOLAE (Schum.) DC. on Viola langsdorfii, Skagway, June 21, 1923, 688; on Viola palustris, Sitka, July 26, 1923, 855, coll. & det. J.P.A.

PUCCINIASTRUM ARCTICUM (Lagh.) Tranz. on Rubus stellatus, Mendenhall, Sept. 13, 1923, 1061, and Juneau, June 30, 1923, coll. & det. J.P.A.

PUCCINIASTRUM MYRTILLI (Schw.) Arth. on Vaccinium alaskense, Sitka, July 26, 1923, 842, Haines, July 19, 1923, and Ketchikan, Aug. 21, 1923, 903; on V. caespitosum, Sitka, July 26, 1923, 837, and Gravina Isl., Ketchikan, Aug. 21, 1923, 907; on V. myrtillus, Tenakee, June 27, 1923; on V. ovalifolium, Skagway, July 23, 1923, 798, Sitka, July 28, 1923, 859, and Gravina Isl., Ketchikan, Aug. 21, 1923, 924, coll. & det. J.P.A.

> "Rust on several Vacciniums is quite widespread but not abundant in Alaska. It is quite inconspicuous and may be more common than ordinary observations reveal. The most common, abundant and conspicuous occurrence known to me is on V. caespitosum around Sitka. This host is not so common at other places in S. E. Alaska as are several other species of Vaccinium."

PUCCINIASTRUM PUSTULATUM (Pers.) Dietr. on (?) Abies lasiocarpa, Skagway, July 22, 1923, 796; on Chamaenerion exaltatum, Haines, Aug. 27, 1923, 965; on C. longifolium, Skagway, Sept. 3, 1923, 1038; on C. spicatum, Haines, Aug. 27, 1923, 964 and Skagway, July 22, 1923, 795; on Clarkia elegans (cult.), Juneau, Sept. 11, 1923, 1055; on Godetia grandiflora (cult.), Juneau, Sept. 11, 1923, 1056; on Epilobium glandulosum, Ketchikan, Aug. 24, 1923, 948, and Tenakee, June 27, 1923, 718, coll. & det. J.P.A.

"Puccíniastrum on various species of Epilobium is common at all points in S. E. Alaska where I have been. It is most abundant on Epilobium glandulosum. Most of this is far from the supposed alternate host Abies. This is the first time I have found Abies affected; growing in proximity to infected Chamaenerion (Epilobium) spicatum."

UREDO HOLWAYI Arth. on Tsuga heterophylla, Sitka, July 25, 1923, 816, coll. & det. J.P.A.

UROMYCES GERANII (DC.) Otth & Wartm. on Geranium erianthum, Haines, Aug. 27, 1923, 961 and Juneau, Aug. 15, 1923, 893, coll. & det. J.P.A.

UROMYCES POLYGONI (Pers.) Fckl. on Polygonum aviculare, Haines, Aug. 29, 1923, 985, coll. & det. J.P.A.

XENODOCHUS MINOR Arth. on Sanguisorba microcephala, Sitka, July 26, 1923, 838, coll. & det. J.P.A.

USTILAGINALES

UROCYSTIS ANEMONES (Pers.) Wint. (?) on Anemone narcissiflora, Juneau, Aug. 7, 1923, 880, coll. & det. J.P.A.

UROCYSTIS VIOLAE (Sow.) Fisch. de Waldh. on Viola glabella, Mt. Roberts, Juneau, Sept. 28, 1923, 1075, coll. & det. J.P.A.

USTILAGO BISTORTARUM (DC.) Koern. on Bistorta vivipara, Skagway, July 22, 1923, 808, coll. & det. J.P.A.

FUNGI IMPERFECTI

ACTINONEMA ROSAE (Lib.) Fr. on Rosa rugosa hybrid, Juneau, July 12, 1923, 753-a; on Rosa sp. (cult.), Juneau, Sept. 10, 1923, 1053, coll. & det. J.P.A.

? ALTERNARIA DIANTHI Stev. & Hall on Lychnis chalcedonica, Sitka, July 30, 1923, J.P.A. 862.

ASCOCHYTA GRAMINICOLA Sacc. on Hordeum nodosum, Funter, July 15, 1923, J.P.A. 760.

BOTRYTIS CINEREA Pers. on Amelanchier alnifolia, Haines, Sept. 2, 1923, 1025; on Lonicera tartarica, Sitka, July 25, 1923, 817; on Phaseolus sp., Skagway, Sept. 2, 1923, 1041; on Rheum officinale, Juneau, Aug. 17, 1923, 895; on Rhinanthus sp., Sitka, July 26, 1923, 854; on Ribes vulgare, Sitka, 1923, 864; on Rubus parviflorus, Haines, Aug. 31, 1923, 1018; on R. subarcticus, Haines, Aug. 31, 1923, 1015; on R. spectabilis, Sitka, July 26, 1923, 843, and Juneau, Aug. 6, 1923, 884; on Saxifraga (rivularis?), Chatham, Aug. 1, 1923, 875; on Vaccinium alaskense, Haines, Aug. 27, 1923, 969, coll. & det. J.P.A.

"Botrytis and other fungi follow drought injury to red currants (Ribes vulgare). On berries of Rubus spectabilis left on the bushes, Botrytis invariably appears first and the berries are covered with conidia while the berry is soft. Later as the berries dry other molds appear. Ericaceous plants seem more resistant to Botrytis than most other groups."

CERCOSPORA GALII Ell. & Holw. on Galium triflorum, Klukwan, July 17, 1923, J.P.A., 773.

CERCOSPORA SYMPHORICARPI Ell. & Ev. on Symphoricarpos racemosus, Klukwan, July 17, 1923, J.P.A., 777.

CERCOSPORELLA ALNI Dearn. & Barth. on Alnus sitchensis, Ketchikan, Aug. 23, 1923, J.P.A., 944.

Cylindrosporium vermiforme J. J. Davis, reported on Alnus, Betula, and Corylus is identical with this species.

CLYPEOPYCNIS AERUGINASCENS Petr. on Ribes bracteosum, Sitka, Aug. 16 and 18, 1922, N.E.S.

COLLETOTRICHUM KENTIAE Halst. on Kentia sp. in greenhouse, Juneau, Sept. 21, 1923, J P A., 1067.

CORYNEUM FOLIICOLUM Fckl. on Rosa sp. (moss rose), Ketchikan, Aug. 24, 1923, J.P.A., 949.

CYLINDROSPORIUM ALNI Dearn. on Alnus oregana, Gravina Isl., Ketchikan, Aug. 21, 1923, J. P. A., 923.

No description of this species was seen, but material agrees with a specimen so named on Alnus oregana from California.

CYLINDROSPORIUM SHEPHERDIAE Sacc. on Lepargyrea canadensis, Haines, Aug. 29 and 31, 1923, J.P.A., 996 and 1013.

CYTOSPORA CORNI Westd. on Cornus canadensis, Skagway, Aug. 1922, N.E.S.

DIDYMARIA DIDYMA (Ung.) Sacc. on Ranunculus macounii, Haines, Aug. 29 and 31, 1923, J.P.A., 1000 and 1012.

DIPLODINA ROSTRUPII Vester. on Phyllodoce glanduliflora, Skagway, July 22, 1923, J.P.A., 804.

Identical with Vestergren's description and illustrations of type specimens on capsules of Phyllodoce and Andromeda from Lapland. Not reported from North America.

DOTHIORELLA LATITANS (Fr.) Sacc. on Vaccinium vitis-idaea, Sitka, Aug. 14-17, 1922, N.E.S. and Ketchikan, Aug. 23, 1923, J.P.A., 936.

ENTOMOSPORIUM MACULATUM Lév. on Amelanchier alnifolia, Haines, Sept. 2. 1923, J.P.A., 1024.

FUSICLADIUM DEPRESSUM (Berk. & Br.) Sacc. on Angelica genuflexa, Juneau, Aug. 14, 1923, J P A., 292, Sitka, July 25, 1923, 832, and Haines, Aug. 31, 1923, J.P.A., 1017.

? HETEROSPORIUM MONTENEGRINUM Bub. on Gladiolus sp., Juneau, July 12, 1923, J.P.A., 755.

Spores much smaller than H. gracile, but may be only a variation of this species.

LEPTOSTROMA HERBARUM (Fr.) Link on Heuchera glabra, Juneau, July 2, 1923, J.P.A., 750.

LEPTOTHYRIUM CONSPICUUM Dearn. & House on Vaccinium ovalifolium, Mt. Roberts, Juneau, Sept. 28, 1923, J.P.A., 1069; on V. parvifolium, Tenakee, Sept. 4, 1923, J.P.A., 1044.

"This spotting of blueberry leaves seems quite common."

MACROSPORIUM CAUDATUM Cke. & Ell. on Callistephus sp., Sitka, Sept. 4, 1923, J.P.A., 1049.

MACROSPORIUM COMMUNE Rabh. on Pisum sativum, Sitka, Sept. 4, 1923, J.P.A., 1047.

MARSONIA BRACTEOSUM Dearn. & Barth. on Ribes bracetosum, Mt. Roberts, Juneau, Sept. 28, 1923, J.P.A., 1080.

MARSONIA POTENTILLAE (Desm.) Fisch. (=Mollisia earliana (Ell. & Ev.) Sacc.) on Fragaria (cult. hybrids), Gravina Isl., Ketchikan, Aug. 21, 1923, J. P. A., 904.

MONOCHAETIA MONOCHAETA Desm. f. LIBERTIANA Sacc. on Rubus sp. (Cuthbert raspberry) Aug. 16, 1922, N.E.S.

MONOCHAETIA TAPHRINICOLA (Ell. & Ev.) Sacc. on Quercus sp., (?), Sitka, Aug. 1922, N.E.S.

MYXOSPORIUM VALSOIDEUM (Sacc.) Allesch. on Quercus sp., (?), Aug. 18, 1922, N.E.S.

OOSPORA SCABIES Thax. on Beta vulgaris, Haines, Aug. 29, 1923, 983, coll. & det. J.P.A.

"The first time I have noted scab on beets. Beets are not much grown in Alaska, however."

OVULARIA BULBIGERA (Fckl.) Sacc. on Sanguisorba sitchensis, Haines, July 18, 1923, J.P.A., 785, and Mt. Roberts, Juneau, Sept. 28, 1923, J.P.A., 1083.

PASSALORA BACILLIGERA Mont. & Fr. var. **ALNOBETULAE** Jaap on Alnus sitchensis, Sitka, July 30, 1923, J.P.A., 863, and Haines, Aug. 27, 1923, J.P.A., 951.

Not reported from North America. This agrees with the Jaap variety rather than the species in narrower conidia, nonseptate conidiophores, and color of the spots, but the variations may not be constant.

PHLEOSPORA ACERIS (Lib.) Sacc. on Acer douglasii, Klukwan, July 17, 1923, J.P.A., 769, Skagway, Sept. 3, 1923, J.P.A., 1039, and Tenakee, Sept. 4, 1923, J.P.A., 1043.

PHOMA COMMUNIS Rob. on Tilia americana, Sitka, Aug. 18, 1922, N.E.S.

PHYLLOSTICTA EXCAVATA Sacc. on Heuchera glabra, Mt. Roberts, Juneau, Sept. 28, 1923, J.P.A., 1078.

PHYLLOSTICTA GARRETTII Syd. on Senecio triangularis, Mt. Roberts, Juneau, Sept. 28, 1923, J.P.A., 1079.

PHYLLOSTICTA JAPONICA Thuem. on Berberis thunbergii, Juneau, Aug. 17, 1923, J.P.A., 894.

PHYLLOSTICTA OSTEOSPORA Sacc. on Populus trichocarpa, Skagway, Sept. 3, 1923, J.P.A., 1026.

PHYLLOSTICTA Sp. on Unifolium eschscholtzianum, Ketchikan, Aug. 23, 1923, J.P.A. 937.

Does not appear to be any species reported on this or related hosts. The spores measure 4-6 x 1μ -- longer than those in P. vagans Pk., and narrower than in Phoma majanthemi Pk.

RAMULARIA ANGELICAE Hoehn. on Angelica genuflexa, Haines, July 16, 1923, J.P.A. 766.

Agrees with Petrak, Fl. Bohem. & Morav. 1296 on A. silvestris. R. angelicae Clements (Crypt. Form. Color. 262 on A. grayii) is similar, but has longer spores, while in R. grantii Dearn., described on A. genuflexa from Washington, they are shorter. All of these fungi produce pallid, dark-margined spots of very similar appearance, and may be variations of the same species.

RAMULARIA ARVENSIS Sacc. on Potentilla monspeliensis, Haines, Aug. 30, 1923, J.P.A., 1007; ? on Argentina anserina, Skagway, July 22, 1923, J. P. A., 803.

RAMULARIA CERCOSPORIOIDES Ell. & Ev. on Chamaenerion spicatum, Sitka, July 25, 1923, J.P.A., 815.

RAMULARIA HERACLEI (Oud.) Sacc. on Heracleum lanatum, Chatham, Aug. 1, 1923, 877, coll. & det. J.P.A.

? RAMULARIA IONOPHILA J. J. Davis on Viola glabella, Mt. Roberts, Juneau, Sept. 28, 1923, J.P.A., 1074.

RAMULARIA ROSEOLA Bub. & Vleugel on Lathyrus palustris, Haines, Aug. 29, 1923, J.P.A., 994.

Not reported from North America. Described on L. maritimus from Sweden.

RAMULARIA RUBICUNDA Bres. on Unifolium eschscholtzianum, Tenakee, June 27, 1923, J.P.A., 729.

Not reported from North America.

RAMULARIA ULMARIAE Cke. on Aruncus acuminatus, Sitka, July 25, 1923, J.P.A., 827.

RAMULARIA URTICAE Ces. on Urtica lyalii, Sitka, July 25, 1923, J.P.A., 833.

RHYNCHOPHOMA RADULOIDES Sacc. & Scalia on Ribes bracteosum, Juneau, July 12, 1923, J.P.A. 752; and Sitka, Aug. 16 and 18, 1922, N.E.S.

SEPTOGLOEUM SALICINUM (Pk.) Sacc. on Salix sitchensis, Haines, Aug. 27, 1923, J.P.A., 958.

SEPTORIA CULMIFIDA Karst. on Phleum pratense, Ketchikan, Aug. 14, 1923, J.P.A. 946.

Not reported from North America.

SEPTORIA RIBIS Desm. on Ribes bracteosum, Sitka, June 26, 1923, J.P.A., 712; on R. laxiflorum, Skagway, June 22, 1923, J.P.A. 691; Juneau, 30, 1923, J.P.A. 744, and July 12, 1923, J.P.A. 754; on R. grossularia (?), Sitka, July 30, 1923, 865; on R. nigrum, Ketchikan, Aug. 23, 1923, 950, and Sitka, July 30, 1923, 867; on R. vulgare, July 30, 1923, 868, coll. & det. J.P.A.

SEPTORIA RUBI Westd. on Rubus spectabilis, Sitka, July 25, 1923, 828, and Ketchikan, Aug. 22, 1923, 931, coll. & det. J.P.A.

SEPTORIA SALICICOLA (Fr.) Sacc. on Salix (? barclayi), Skagway, Sept. 3, 1923, J.P.A. 1030.

SPORONEMA OXYCOCCI Shear on Vaccinium oxycoccus, Sitka, Aug. 15, 1922, N.E.S.

TUBERCULARIA VULGARIS Tode on Alnus sp., Ribes bracteosum, and Tilia americana, Aug. 18, 1922, N.E.S.

## RUST DISEASES OF GRAIN CROPS IN OREGON IN 1933-34.

Roderick Sprague

Following the mild winter of 1933-34 the most serious outbreak of cereal rusts in the history of the State occurred in western Oregon. A combination of leaf rust, footrots, and other diseases plus some Hessian fly reduced the potential yield of the winter wheat crop over 50 per cent in the Willamette Valley. Leaf rust (Puccinia triticina) was the outstanding disease; it alone caused 25 per cent to 35 per cent loss in a number of counties in the Willamette country. Many fields were too poor to harvest and were plowed under in early May. The estimated loss from leaf rust in the Willamette region by counties was as follows:

| County | Bushels potential yield (Based on 1929 census) Winter wheat only | Loss in bushels |
|---|---|---|
| Benton | 125,000 | 40,000 |
| Clackamas | 437,000 | 130,000 |
| Douglas | 110,000 | 15,000 |
| Lane | 200,000 | 55,000 |
| Linn | 345,000 | 135,000 |
| Marion | 665,000 | 230,000 |
| Polk | 375,000 | 100,000 |
| Washington | 733,000 | 220,000 |
| Yamhill | 647,000 | 210,000 |
| Total | 3,637,000 | 1,135,000 |

The loss in these counties approximates 30 per cent and for the State as a whole taking into consideration both spring and winter grain the loss will be about 6.5 per cent. While leaf rust was present in the larger wheat sections in the drier eastern part of the State it was not serious. The total loss in bushels of wheat for the State is estimated at 1,300,000+.

Crown Rust (Puccinia coronata) plus Fusarium footrot virtually destroyed the oats crop in a considerable portion of the coast country this year. The acreage in this section has steadily decreased so that the loss in bushels will be slightly under 100,000 bushels. Past experience has so discouraged the growers that unless resistant varieties of cereals are developed for this coastal region grain growing will practically cease.

Traces of stem rust (Puccinia graminis) were present on wheat and considerable quantities occurred on very early seeded winter oats. On volunteer oats stem rust was very destructive.

Stripe rust (Puccinia glumarum) was present this year in moderate amounts on winter wheat from Roseburg, south to Grants Pass.

# CEREAL DISEASES IN NORTH GEORGIA

Julian H. Miller

BARLEY. Covered smut (Ustilago hordei). Very little barley is raised here except in experimental plats. There was from 4 to 8 per cent smut.

Powdery mildew (Erysiphe graminis f.). Tennessee Winter barley about May 8, became heavily infected with mildew. The leaf infection was 100 per cent and most of the leaves died. The mildew did not attack other nearby grains.

OATS. Crown rust (Puccinia coronata). Practically absent this spring in all fields near here and in the mountain counties. In May found only in two fields in the lower part of Oconee County. A little is now appearing on late plants, but too late to do any appreciable damage as oats are now being harvested. It always comes much later than P. triticina on wheat, and the late spring has made it later than usual.

Loose smut (Ustilago avenae). From 2 to 8 per cent of the panicles were smutted this year. Very few farmers treated their seed.

RYE. Leaf rust (Puccinia dispersa) was found on most of the rye fields from early in May to harvest, but caused very little damage this year. There was much less rust on rye in mountain valleys than in the piedmont section.

WHEAT. Leaf rust (Puccinia triticina) appeared late this year, about May 4, but from then on it spread very rapidly and on May 24, in the counties surrounding Clarke most of the leaves were dead with rust. There was no difference in resistance to be seen in any of the varieties planted. The grain was in the milk stage when most of the leaves were destroyed. When combined with the other leaf diseases, leaf rust caused considerable loss.

Leaf blotch (Septoria tritici). Heavy infection of the lower leaves was seen early in May before much rust had appeared. A few fields were entirely stripped by this disease in Oconee County with practically no leaf rust.

Glume blotch (Septoria nodorum). In two fields in Oconee County 50 per cent of the heads were dead and unmatured. The dead stalks were about two-thirds as high as those still living. No blotch or very little was observed in other fields. This wheat was Tennessee Purple Straw.

Loose smut (Ustilago tritici) was found in all wheat and was most evident about the middle of May. There was from 1 to 4 per cent loss. Smut treatment was not used on any farms visited.

# RESULTS OF POTATO INSPECTION IN GEORGIA

Julian H. Miller

Certification of seed potatoes was begun this year in three of the mountain counties. The Horticultural Extension Service planted four cars of certified northern potatoes in Lumpkin, Union, and Rabun Counties. The seed potatoes were treated with Semesan, cut and planted immediately.

During the last week of May the writer made an inspection of these plantings. At the time of the inspection the potatoes were beginning to bloom. The diseases seen then are listed below.

## Lumpkin County

1 car certified Bliss from Minnesota.

Tip burn (undet.). From 2 to 10 per cent of leaves affected. Little hopper injury observed. Cobblers in many cases when planted next to them had no tip burn.

Blackleg (Bacillus phytophthorus). From 2 to 5 per cent in most fields. None of these fields had been in potatoes for several years. The first observed symptoms were a curling of the terminal leaves and a blackening of the root tip and soft rot of the old piece. In advanced cases there was a complete wilt and a soft slimy blackening of all the roots and also the shanks several inches above the ground. Young potatoes were seen with soft black spots.

Mild mosaic from 2 to 3 per cent.

Leaf roll, from 1 to 4 per cent.

Curly-dwarf mosaic, 1 to 2 per cent.

Spindle tuber, 1 per cent or less.

Most fields had over 6 per cent of these virus diseases.

1 car certified Irish Cobblers from Minnesota.

Blackleg, from 2 to 10 per cent.

Wilt (Fusarium sp.), 1 per cent or less. Found in few fields.

Dwarf mosaic 1 to 3 per cent.

Mild mosaic 1 to 3 per cent.

1 car certified Irish Cobblers from Kentucky.

Mosaic, dwarf, 1 to 3 per cent, less than 1 per cent in many fields.

Mosaic, mild, 1 to 2 per cent.

Mosaic, rugose, 1 per cent in one field.

No blackleg or other diseases were found in fields from this car.

Union County

1 car certified Irish Cobblers from Minnesota.

Blackleg 2 to 6 per cent. Found only in a few fields that had been in potatoes the previous year, or in a field that lay below one that had been previously planted in potatoes. There was none in new fields, so probably none came with the seed potatoes.

Mosaic, mild, 1 to 2 per cent.

Mosaic, dwarf, 1 to 3 per cent.

Early blight (Alternaria solani). Just starting in two fields.

Rabun County

1 car Maine select (not certified) Irish Cobblers.

Blackleg 5 to 50 per cent in all fields. The diseased plants were dying rapidly with the soft black rot. The field with the lowest percentage had been rogued twice before the inspection.

Black scurf (Rhizoctonia sp.). 1 to 2 per cent. Not serious except in one field.

Mosaic, chiefly mild, 1 to 3 per cent.

1 car Green Mountain select (not certified) from Maine.

Blackleg, 5 to 15 per cent.

Mosaic, mild, 2 to 5 per cent.

Black scurf, 2 to 3 per cent.

Small lots of Green Mountain certified from North Carolina.

Wilt (Fusarium sp.), 1 per cent in two fields.

Black scurf, 1 per cent or less in most fields.

Mosaic, mild, 1 to 10 per cent.

Early blight. Just starting in several fields.

The fields planted from native stock were uniformly better than those from certified or selected seed potatoes. The county agents unfortunately got a few bad cars.

Practically no leaf diseases had appeared. There was only a trace of early blight and no late blight.

## SOME DISEASES OF TRUCK CROPS IN LOUISIANA

E. C. Tims

Some truck crop diseases have been unusually severe this spring in Louisiana.

TOMATO. Stem Rot of Transplanted Tomatoes. Plants were set out in the tomato wilt plots at Baton Rouge April 9, after being grown in the greenhouse for about two months. There was a period of very wet, cloudy weather following the transplanting. By April 16, approximately 10 per cent of the tomato plants had rotted off at the soil line. The collapsed condition of the stems strongly indicated the presence of Pythium, and when diseased material was plated, a Pythium was obtained. Wager (South African Jour. Sci. 30: 247-249) recently reported a stem rot of transplanted tomatoes which he attributed to Pythium aphanidermatum. The stem rot condition in Louisiana is very similar to that described by Wager.

Early Blight (Alternaria solani). The first specimens of early blight on tomato were received about May 1. Since that time the disease has been more widespread and destructive in south central Louisiana than has been seen in several years. In many fields which were not sprayed the losses have been rather large. There has been a considerable amount of spotting of the fruit as well as destruction of the leaves this year.

Mosaic was first observed on May 6 at Baton Rouge. By June 1, there was about 65 per cent infection in the Station plots, much less than last year.

Blossom-end Rot has been much worse than usual because of the abnormally wet weather during the time the first fruit were being set, followed by dry spells. Blossom end rot was worse in the later plantings than in the very early fields.

Wilt (Fusarium lycopersici). Wilt began to develop slightly later than usual this year, because of the comparatively cool spring (April and May were somewhat cooler than normal in Louisiana). But susceptible varieties in infected soil now show a high percentage of wilt. In general wilt has probably not been as destructive as usual.

Fruit Rot (Phytophthora terrestris). This type of rot began to show up about the first of June and caused a considerable amount of damage for a short time. Phytophthora rot is not of very common occurrence on tomato in this section of the State.

Leaf Spot (Septoria lycopersici) only occurred sporadically this year.

BEAN. Halo blight (Bacterium medicaginis phaseolicola), and Blight (Bacterium phaseoli). Both the bacterial blights were destructive on the early string bean crop this year, but the ordinary blight has been the more severe. Some fields which showed promise of producing fine yields were practically ruined within a period of a few rainy days. It has been very difficult to be sure of obtaining seed even reasonably free of blight infection.

Powdery mildew (Erysiphe polygoni) was rather common in some fields in Terrebonne Parish, but apparently caused little damage.

Southern Wilt (Sclerotium rolfsii). Some plants were killed by Sclerotium wilt, but damage was not very general.

Root and Stem Rots (Rhizoctonia; and probably Fusarium sp.). There is always a certain amount of this type of trouble, especially in the heavier soils in the southwestern section of the State. This year there was about the usual amount of damage.

CABBAGE. Black Rot (Bacterium campestris). A severe outbreak of black rot occurred in the plots of the Horticultural Department at Louisiana State University in the early part of April. From 10 to 15 per cent of the plants were killed or damaged, the outbreak beginning just before the plants began to head. The black rot infection in this case is rather difficult to explain, since the seed are said to have received the standard mercuric chloride treatment. The infection probably took place either in the hot beds or cold frames. Black rot apparently caused much less damage in the principal cabbage growing areas this season than last year.

## DISEASES OF VEGETABLE CROPS IN NORTHERN GEORGIA

Reported by Julian H. Miller (June 9)

CABBAGE. Yellows (Fusarium conglutinans). Two years ago there was a very serious amount of yellows in the cabbage area of Union County, but this year I found it only in one field. Half of the field was in the variety Copenhagen, at least 50 per cent of which had died. The other half was in Marion Market, a resistant variety, and none of these plants died or seemed to be affected in anyway.

CANTALOUPE. Powdery mildew (Erysiphe polygoni). In one field of 150 acres near Tifton, at least 20 per cent of the vines were badly affected and most of the other leaves were getting slight infections. Heavy rains lately were probably responsible for this rapid spread.

## PEA DISEASES IN WISCONSIN

Diseases and injuries of green peas in Wisconsin are reported by R. E. Vaughan as follows (June 20):

Bacterial blight (Bacterium pisi). Observed in Waukesha and Manitowoc Counties, evidently in both cases from seed infection. Minor in other locations and varieties. Perfect variety in Waukesha County causing considerable loss.

Wilt (Fusarium orthoceras). First occurrence at Waupun, June 4. Mild infection because most fields known to be infected are seeded with resistant stocks of Alaska and Prince of Wales. A few serious losses in new areas for wilt in Mannitowoc County.

Root rot (Aphanomyces euteiches). Mild infection found only on heavier soils in lake shore counties. Occasional low spots moderately damaged.

Drought (Lack of rain). Early crop in central section hardly worth cutting. Yield only 5 to 25 cases per acre. Hot winds caused excessive damage when crop was in blossom stage.

Frost. Damage severe on all early plantings. Heavy frosts April 25, May 17, and May 24. Injury general over the State. Maturity of crop very irregular as result of frost.

## DISEASES OF THE AUSTRIAN WINTER PEA IN NORTHERN GEORGIA

Julian H. Miller

The Austrian winter pea [a variety of Pisum arvense] has been planted on many farms during the last few years as a winter cover crop. There has been a fair crop the first year, but on farms on which peas have been planted for the third time they have been so badly diseased that in many cases the vines died long before the seed could mature. A survey of the pea diseases was made this spring, and they are considered in order of appearance.

Bacterial Blight (Bacterium pisi) was the first disease to appear. Lesions on the lower stems and petioles were evident in April. In many fields the lower third of the stems turned black and the lower leaves died at that time. Some plants were killed outright, but most of them remained alive.

Mycosphaerella Blight (Mycosphaerella pinodes) was found early following the peak of the bacterial blight, about May 1, and after that date it was difficult to determine which disease was causing the most injury. Perithecia with mature ascospores were found on dead parts of leaves, May 10.

Leaf Blotch (Septoria pisi). The pycnidia of Septoria were found on many of the plants that contained the Mycosphaerella, and at about the same time.

Foot Rot and Blight (Ascochyta pinodella) was found first about the 24 of May and in most of the fields in combination with the other diseases.

Leaf and Pod Spot (Ascochyta pisi) also appeared late. By June 8, the pycnidia were found on most of the dying pods and leaf spots.

Powdery Mildew (Erysiphe polygoni). Due to the late spring the mildew did not show up until after June 1, and by June 9 the partially alive vines are covered with it. This disease has never been as serious in the northern as in the southern part of the State.

Most of these diseases cannot be controlled by seed treatment as they occur on so many of the native legumes which are found in every field. (June 9).

## DOWNY MILDEW OF HOPS (PSEUDOPERONOSPORA HUMULI) IN CALIFORNIA

The following statement is quoted from a letter of C. E. Scott to R. J. Haskell, May 31:

> "Downy mildew of hop has commanded much of my attention since May 1. It is present in Sonoma and Mendocino Counties. So far it has been serious in about a third of the Sonoma County yards."

## THE PEAR BLIGHT SITUATION IN ARKANSAS, JUNE 26, 1934

H. R. Rosen

Blight (Bacillus amylovorus) on pears is extremely common and highly destructive this year as blossom blight and as twig and limb blight. Not since 1929 has this disease been so prevalent on pears. My notes show that during the years 1930 to 1933, inclusive, there was very little blight on pears. These years also mark a period in which winter freezes and late spring frosts caused nearly total destruction to pear blossoms, and when this occurs fire blight is usually negligible in Arkansas.

Pear trees, largely Kieffers, were in full bloom this year at Fayetteville in the last days of March and the first week in April. The bloom was exceptionally heavy, and came about a month prior to that of apples. On April 25, 80 per cent of Jonathan blossoms were wide open at Rogers. Crab apples, being extremely subject to late spring frosts, are very rarely used in the Ozarks of Arkansas. None were under observation this year.

The first blight on pears was noted at Fayetteville on April 26, in the form of blighted blossom clusters, and judged by the amount of leaf discoloration and degree of withering it must have appeared at least a week or 10 days before it was observed. Fully 90 per cent of the blossom clusters were blighted on trees in various orchards of Washington and Benton Counties, including trees which had not been known to have blighted previously. By May 2, much secondary blight in the form of blighted twigs was observed. In one group of trees which possessed numerous root sprouts, the sprouts arising in some instances a few feet from the trunks, those which happened to be beneath clusters of blighted blossoms and shoots,

were also badly blighted. This clearly indicated a dissemination by rains, particularly those which fell in the interval between April 4 and 11, and that of April 27.

The first blight on apples was noted on May 10 on Jonathans and consisted of both blossom and twig blight, with the former predominating. By the end of May numerous Jonathan orchards in the two apple growing counties showed varying amounts of blight, some with relatively large amounts. It appeared in orchards which had little or no blight in 1933, as for example, in the Horticultural Plots of the Agricultural Experiment Station. While the disease on apples is not nearly as common or as destructive this year as in 1930, yet there are individual orchards blighted seriously now which were relatively free from blight in 1930.

Since no signs of bacterial exudate were observed prior to the appearance of the first pear blight in 1934, the question is, what was the source of inoculum for the first blight? I put this question in the form of a challenge to all southern pathologists. (Northern pathologists live in an entirely different world so far as the behavior of overwintered blight and the production of bacterial ooze are concerned). Which southern pathologists noted bacterial exudate prior to the first appearance of blight in 1934?

## FRUIT DISEASES IN ILLINOIS

We have had one of the worst spring droughts ever experienced in this section of the country. Following the 1933 epidemic of scab (Venturia inaequalis) which was the worst in the history of our apple growing, we have a year when it is extremely hard to find a single scab spot on the leaves. There has not been a continuous rain in most sections of the State since the time of the prebloom sprays. It will be interesting to see what effect the lack of scab this year will have on the disease next spring.

As usual during a dry spring we have had a severe outbreak of blight (Bacillus amylovorus) of the blossom blight type in many sections of the State. This was especially severe on Jonathans in the south-central and southern part of the State. I presume this is correlated with the extremely favorable weather for cross pollination and the general very light bloom may also have been an important factor.

Another outstanding disease this season is the orange rust of blackberries (Gymnoconia peckiana). I have never seen the wild blackberry so heavily infected and have had numerous complaints from growers in regard to the disease in their cultivated plantations.

There is a general absence of all other fruit diseases, such as cherry leaf spot, fabraea leaf spot of pear, anthracnose of gooseberries and anthracnose of raspberries.

I noticed recently a report from Dr. Valleau of Kentucky in regard to the condition of the Latham raspberry plantations in Kentucky. The

condition in central and southern Illinois is very similar to that reported by him. In 50 per cent of the patches the canes were killed to the base, while in perhaps 40 per cent of those remaining the canes were killed at least half way down and are in a weak condition. While we have noticed that spraying has reduced the amount of injury, yet in our experimental plots we did have considerable injury even where the Septoria leaf spot (Mycosphaerella rubi) and anthracnose (Elsinoe veneta) had been well controlled. In our check plots where no sprays had been applied, all the canes were killed to the ground. (H. W. Anderson, June 5).

## OTHER REPORTS ON DISEASES OF FRUIT CROPS

APPLE SCAB IN MICHIGAN: Considerable leaf infection was evident on unsprayed apple trees in southwestern Michigan traceable to the light rain on May 21. Trees covered for the petal fall spray before this rain have remained comparatively free from scab while those sprayed after the rain have as much infection as unsprayed trees. The infection was much lighter at East Lansing than it was near Battle Creek. No fruit scab has been seen to date. Leaf infections have been reported on unsprayed trees at South Haven and at Ludington. Active ascospores were still present at Ludington on June 11 at time of first cover spray; about 50 per cent of the spores have been discharged and many remaining asci are immature due to the continued drouth. Serious sulfur burn was seen in some Berrien county orchards sprayed during or just before extremely hot weather on May 29 and 30. Especially severe burn was seen on King apples. (Donald Cation, June 14).

APPLE DISEASES IN NORTHERN GEORGIA: Cedar apple Rust (Gymnosporangium juniperi-virginianae). Due to the late spring, with much rain, the infection period lasted longer than usual. The first basidiospores were found here about the first of April and teliospore germination continued on with variable periods through the twentieth of May. The percentage of infection of apples in commercial orchards has been very small.

Blight (Bacillus amylovorus). While there has been more pear blight, there has been less apple blight than is usually seen.

Root Rot (undet. white mycelium). In Rabun and Habersham Counties a good many apple trees died in spots in several orchards. This year trees near ones that were pulled up are dying in the same manner. The leaves turn yellow and when the tree is shaken it is found to be loose with dead lateral roots. (Julian H. Miller, June 9).

LEAF VARIEGATION OF BLAKEMORE STRAWBERRY IN MASSACHUSETTS: On May 15, I observed a very noticeable amount of chlorosis or leaf variegation in a Blakemore bed in Westfield. This is the first time I have observed this condition in that variety. The bed had been set the preceding year from a bed on the same farm. The grower stated that he did not notice the condition last year. In 1933, his first year with that variety, he secured the plants from a nursery in Maryland. (O.C. Boyd, June 18).

THREAD BLIGHT OF FIG (CORTICIUM KOLEROGA) IN LOUISIANA: There was an unusually early and severe outbreak of thread blight on a group of several young (3 to 4 years old) fig trees near Baton Rouge during the early part of

June. Within a period of a few days the trees were practically defoliated and the fruit destroyed. Many of the small branches were covered with mats of mycelium on which basidiospores developed. This is the first time that the basidial stage has been found on any part of the plant except the leaves. (E. C. Tims).

## SOME DISEASES OF ORNAMENTALS

SWEET PEA DISEASES IN LOUISIANA: Anthracnose (Glomerella cingulata) began to develop in a very severe form on sweet peas in and around Baton Rouge about the first week in April. The plants were unusually large and vigorous this spring, and when the rainy weather began, many plantings were wiped out in a very few days. Blossom infection was very conspicuous this year. Many of the diseased blossoms were entirely covered with the pale pink masses of anthracnose spores.

Mildew (Erysiphe polygoni) was also more prevalent than usual this spring, particularly during the latter part of April. Where no control measures were attempted there was considerable damage from mildew. (E. C. Tims).

ROSE DISEASES IN NORTHERN GEORGIA: Brown canker (Diaporthe umbrina). A severe attack was found in a rose garden in Atlanta.

Powdery mildew (Sphaerotheca pannosa) has been extremely destructive this year, especially on the ramblers, destroying leaves, young twigs, and flower buds.

Black spot (Diplocarpon rosae). Serious defoliation has occurred on many bush roses.

Leaf spot (Cercospora rosaeicola) appears late and by June is found on most roses around Athens. It seldom causes much defoliation (Julian H. Miller, June 9).

HOLLYHOCK: Rust (Puccinia malvacearum) in Georgia. Badly infected plants were found in the mountain section at Rabun Gap and at Blairsville. Rust is very rare on hollyhocks further south. (Julian H. Miller, June 9).

SOFT ROT (Bacillus carotovorus) of calla lily and Easter lily in Georgia. In an Athens greenhouse there was a loss of from 15 to 20 per cent of the calla lily plants due to soft rot. About 10 per cent of the Easter lilies in this same greenhouse died from the same organism. The corms and bulbs were obtained from a Florida nursery. (Julian H. Miller, June 9).

# OBSERVATIONS OF INTEREST ON NEMATODE DISEASES OF PLANTS

G. Steiner and Edna M. Buhrer

Heterodera marioni, the root knot nematode, was observed on the following new hosts:

Digitaria ischaemum, a grass grown in U.S.D.A. greenhouse, Washington, D. C.

Iris laevigata var. Yamato Nishiki from Japan.

Antennaria dioica tomentosa from England.

Rhaphithamnus cyanocarpus from England.

Lamium orvala alba from England.

Trifolium michelianum from Beaumont, Texas (through E. A. Hollowell).

Anguillulina dipsaci, the bulb or stem nematode, was observed on:

Irish potatoes from Morocco (interesting new locality).

Phacelia heterophylla, a weed growing in clover fields near Portland, Oregon, (this new host observed by W. D. Courtney).

Aphelenchoides fragariae, the strawberry nematode, was observed on the following new hosts:

Lilium philippinense formosanum grandiflora (Takasago lily) in buds. From Moss Beach, California (through C. E. Scott and H. N. Hansen).

Grossularia reclinata, the gooseberry, in buds and leaves, from Albion, California, (through C. E. Scott and H. N. Hanson).

Ligustrum vulgare, the European privet, in stem galls from Washington, D. C.

Aphelenchoides parietinus in violets from Wauwatosa, Wisconsin, causing crinkling and dwarfing.

Neotylenchus abulbosus in chestnut from Spain.

Hoplolaimus bradys in yam roots from Porto Rico (formerly known only on same host from Jamaica).

Paraphelenchus amblyurus in Dioscorea batatas from Japan, causing brown streaks through tissue.

# STATUS OF THE DUTCH ELM DISEASE

K. F. Kellerman

An extensive outbreak of the Dutch elm disease caused by Graphium ulmi was found in 1933 involving about 1,400 square miles extending out from the port of New York. Up to the present time more than 1,600 diseased trees have been found. The latest report in which the data are separated shows a total of 1,706 diseased trees in the infested area by States as follows: New Jersey 1,427, New York 275, and Connecticut 4.

In this area the smaller European elm bark beetle Scolytus multistriatus was already well established and the disease has spread rapidly.

During the past winter a considerable force of CWA workers were engaged in the area with the objective of locating and destroying the diseased trees insofar as practicable in the dormant season. In spite of protracted adverse winter weather conditions, satisfactory work was accomplished and heavy spread of the disease during the early part of this season has undoubtedly been largely prevented. However, intensive winter work could not be extended over the entire area with the personnel available and it is now known that scolytid beetles emerged this spring from at least a few diseased trees in the lightly worked portion of the area.

A very critical situation has developed in the area this spring (1934) due to the development of overwintering infections which could not be adequately found during the winter because of the dormant condition of these trees or the lightness of the infection. The active growth of the overwintering infections became evident by wilting of the trees about May 20, and as a result by June 20 more than 1,000 wilted, dying and dead trees were found by a light scouting of part of the area. It is estimated on the basis of this work that there may be as many as 5,000 wilting and dying trees in the area now. Wilting as the result of current season's infections has not become evident as yet.

While it is known that some beetle emergence occurred this spring from infected dead trees that were not found in the winter, the possibility of spread from this source is insignificant as compared with the possibilities developing in the trees killed early this season. These dead and dying trees are now being heavily attacked by the bark beetles and the trees must be removed and disposed of within six to ten weeks after invasion by the beetle to avoid the risk of a serious spread of the disease from this source.